

## 113.1 - Cements and Related materials (powder form)

These portland (1880b, 1881a, 1884b, 1885a, 1886a, 1887a, 1888b, and 1889a) and calcium aluminate (1882a and 1883a) cement SRMs are for x-ray spectroscopic and chemical analysis of cements and related materials. [Also see [Table 301.2](#) Cement Turbidimetry and Fineness and [Table 113.2](#) Portland Cement Clinkers.] SRM 2696 Silica Fume is a cement additive. Each unit of SRM 2696 consists of one bottle.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	Description	Unit Size	Component (mass fraction, in %)													
			Al <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	Loss on Ignition at 950 °C	Mn <sub>2</sub> O <sub>3</sub>	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	Calcium oxide (CaO)	Chlorine (Cl)	Fluorine (F)	Free CaO
634a	Portland Cement	100 g	5.015	0.0114	3.362	0.3572	1.66	0.0229	0.0842	0.1767	20.493	0.2463	65.07			
1880b	Portland Cement	4 vials x 5 g	5.183	0.01927	3.681	0.646	1.666	0.1981	0.0914	0.2443	20.42	0.236	64.16	0.01830	0.0539	1.567
1881a	Portland Cement	4x5 g	7.060	0.0588	3.09	1.228	(1.59)	0.1042	0.199	0.1459	22.26	0.3663	57.58	0.013	(0.09)	(0.29)
1882a	Calcium Aluminate Cement	4x5 g	39.14	0.113	14.67	0.051	(0.20)	0.060	0.021	0.070	4.01	1.786	39.29			
1883a	Calcium Aluminate Cement	4x5 g	70.04	0.006	0.078	0.014	(0.35)	(0.003)	0.30	(0.003)	0.24	0.020	29.52			
1884b	Portland Cement	5 vials x 4.5 g	4.851	0.00791	2.937	0.957	(1.448)	0.0750	0.278	0.0965	19.30	0.2651	61.31	0.0065	0.0394	0.418
1885a	Portland Cement	4 x 5 g	4.026	0.0195	1.929	0.206	(1.68)	0.0478	1.068	0.1220	20.909	0.195	62.39	0.0040	0.13	(2.05)
1886a	Portland Cement (White Portland Cement with Low Iron)	4 x 5 g	3.875	0.0024	0.152	0.093	(1.56)	0.0073	0.021	0.022	22.38	0.084	67.87	0.0042	(0.02)	(2.16)
2696	Silica Fume	70 g	0.2080		0.055	0.655	2.11*	0.0299	0.129	0.0863	95.61		0.486			

\* Loss on Ignition at 750°C

Certified values are normal font.

Reference values are italicized.

Values in parentheses are for information only.

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Insoluble Residue
0.487 (5.2)
0.159 (0.22) (0.23)
(0.13) 0.32 (0.66)

\* Loss on Ignition at 750°C

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SRM	Description	Unit Size	Component (mass fraction, in %)								
			LOI 220 °C to 550 °C	LOI 45 °C to 220 °C	LOI 550 °C to 950 °C	Magnesium oxide (MgO)	Sodium oxide (SrO)	Sulfide Sulfur	Sulfur trioxide (SO <sub>3</sub> )	Total	Zinc oxide (ZnO)
634a	Portland Cement	100 g				1.0057	0.0735		2.780		0.0222
1880b	Portland Cement	4 vials x 5 g				1.176	0.0272	0.0131	2.710	(100.49)	0.01054
1881a	Portland Cement	4x5 g				2.981	0.036	(0.035)	3.366	(100.18)	0.0489
1882a	Calcium Aluminate Cement	4x5 g				0.51	0.024			(99.95)	0.004
1883a	Calcium Aluminate Cement	4x5 g				0.19	0.019			(100.78)	
1884b	Portland Cement	5 vials x 4.5 g	0.261	0.590	0.597	4.74	0.0258	0.0072	4.034	(100.54)	0.0042
1885a	Portland Cement	4 x 5 g				4.033	0.638		2.830	(100.18)	0.0029
1886a	Portland Cement (White Portland Cement with Low Iron)	4 x 5 g				1.932	0.018		2.086	(100.12)	(0.001)
1887a	Portland Cement	4 x 5 g				2.835	0.322		4.622	(100.21)	0.0667
1888b	Portland Cement	4 vials x 5 g	0.616	0.573	0.850	3.562	0.1009	0.015	2.634	(100.42)	0.01253
1889a	Portland Cement (Blended with Limestone)	4 x 5 g				0.814	0.042		2.69	(100.09)*	0.0048
2696	Silica Fume	70 g				0.235					0.051

\* Loss on Ignition at 750°C

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